and air to the exclusion of other things, but I distinctly did not do this. The point I wanted to make was this: it is not the trauma alone that does the good, nor is it alone the relief of pressure. It seems to me there is unquestionable evidence to prove that no one cause can be assigned to explain the cure which results after operation in tuberculosis of the peritoneum. The other point I wanted to make is that a careful study of the literature of the subject had convinced me that there are many elements entering into the cure of each case. To be wise and fair, we must attach importance to all the elements and use common sense, which really is the only thing that enters into the technic of all medicine and surgery. In support of what I did say in reference to light and air, I would mention that these conditions probably do more good than is often ascribed to them. Dr. Laplace says that, if you do not keep these bacteria in the dark they will die, but it does not hurt them to lie in the light and air. These cases get well, but not because of tuberculous inflammation, nor is it because they are enclosed within walls of fibrous material. I agree with Dr. Hall and should certainly drain whenever mixed infection is present. Tubercular germs are not pus-producing germs. If you have pus you must have something besides tuberculosis.

THE ADVANTAGES OF THE VAGINAL OPERATION IN OBESE PATIENTS.*

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The assurance and skill which an operator acquires by following in any one condition a certain method of operation and technic might be commended, provided all his cases approach an ideal. However, this is far from any one's experience.

The popularity of the vaginal route for hysterectomy which is steadily growing among American surgeons has not reached its height with me. However, I do find in certain cases the method to be, if not ideal, at least expedient. I refer particularly to those cases in which excessive deposits of adipose tissue throughout the body are a sure indication of lowered vitality and lessened power of resistance to shock and to sepsis.

My early experience with this class of cases was very unhappy, and I have welcomed the simplification of the technic of vaginal hysterectomy by a bi-section of the uterus as a fortunate advance in modern surgery.

ADVANTAGES MENTIONED.

I wish merely to emphasize the value of the vaginal operation in those cases where general physical conditions would make one hesitate to advise an abdominal section, and will leave the discussion (so far as the local conditions obtains and the technic of the original method) to others.

1. The length of time in which the patient is being subjected during an operation should always be considered as a factor against the employment of the unessential elements of technic. The longer the time of operation the greater the depression, the larger the amount of anesthetic, the longer exposure, the more handling of parts which must necessarily give an increased reflex action occasioning shock.

2. In thick belly walls the difficulty in which the pelvic organs are brought into the wound necessitates more or less bruising of the wall—a source of danger to infection. The poor blood supply of fatty tissue is another element of risk in the proper repair of a wound.

The contra-indications to any vaginal procedure except merely for drainage of an abscess cavity is the presence of adhesions above the brim of the pelvis.

REPORT OF CASE.

In the case which I am about to report, however, the general condition of the patient was such that notwithstanding the evidences of adhesions outside of the pelvis, hysterectomy was performed by the vaginal route with a very satisfactory recovery, whereas the result, I am sure, would have been disastrous had an attempt been made to remove the diseased organs through an incision in the abdominal wall.

History.—Mrs. E. S., aged 33 years, married for the second time, three years previous. She had given birth to three children, of whom the youngest was 15 years old. She had had no miscarriage nor puerperal fever following any of her confinements. When 23 years of age, she had diphtheria, and at 30 a severe attack of smallpox, her first husband and children dying of the latter disease. The early menstrual history is negative. After the birth of her second child she suffered greatly at times with dysmenorrhea, flowing at irregular intervals and usually in profuse quantity. Five years ago she had severe hemorrhages from the uterus and was curetted. She was entirely relieved for some months but gradually the conditions returned and she has been practically flowing now more, now less ever since.

In June of 1901 she was again curetted with temporary relief; since this last curettement she suffered intensely at times and noticed that a swelling in the lower part of the abdomen which she first discovered in 1900 was steadily developing. This, upon examination, however, proved to be only adipose tissue in the belly wall. The uterus was greatly increased in size and immovably fixed in retroversion—large inflamatory masses were found in each lateral vault of the vagina.

Operation.—On Feb. 10, 1902, after curetting and thoroughly disinfecting the whole uterine cavity, I proceeded to the removal of the uterus and its diseased appendages by vaginal hysterectomy—bisecting the uterus and applying clamps to the broad ligament.

The walls of the uterus were much thickened and fibrous, and there were double tubo-ovarian cysts or old abscesses with exceedingly dense adhesions to adjacent structures. Fingers of omentum and a coil of intestine were freed and returned to the abdominal cavity and the pelvis and vagina were packed with sterile gauze.

Six drams of chloroform were administered for a few minutes short of one hour. The time required for the hysterectomy was 35 minutes.

The clamps were removed in 48 hours and the last of the gauze in the pelvis on the eighth day. The patient was out of bed on the 22d day following her operation. The vault of the vagina being perfectly closed and seemingly firm.

This patient, whose height was 5 feet, 7 inches, weighed 281 pounds. She was extremely anemic and cachectic with a pulse of small volume, low tension, irregular and arrhythmic and averaging about 110 per minute.

At no time following the operation did I feel a bit anxious as to the outcome, and yet never did I have so unpromising a case.

DISCUSSION.

DR. C. O. THIENHAUS, Milwaukee—I am always in favor of the vaginal route because of the immediate and remote advantages of this route for the patient, not always for the surgeon, and am of the opinion that, what we can operate on by this route should be operated on by this route. What experts in this line of work are able to perform is shown, for instance, by the statistics of Duehrssen, who operated on thirty-six cases of extrauterine pregnancies ruptured and unruptured by vaginal anterior celiotomy without a death. He advocates this method for every case of extrauterine pregnancy up to the third month. Statistics of others show the same good results. Naturally, the individuality of the surgeon and the experience in this line of work plays a great rôle. Dr. Goldspohn chal-

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lenged me the other day to show him the literature where Duehrssen cites only 2 per cent. of recurrences with his method of vaginal suspension. This is cited, as will be stated in my paper the day after to-morrow, in Duehrssen Zeile: 20 photographic plates for illustration of gynecologic operations, in special conservative colpo-celiotomy, Berlin, 1902, Kargers Verlag, page 17.

DR. J. H. CARSTENS, Detroit—I want to say, in defense of American operators, that we can show men here in this country who had thirty, forty and sixty cases without a death and they operated by the abdominal route.

DR. J. WESLEY BOVEE, Washington, D. C.—I agree thoroughly with the author of this paper. I believe that the vaginal route is the proper route for this kind of work. It is the route for carcinoma when we intend to do a radical operation in but rare cases. In ruptured tubal pregnancy it is really a toss-up whether it is the preferable route or not. If adhesions, which are beneficial, in these cases, are present, and an accumulation of blood, etc., way down in the pelvis, we can take it out in this way, but if we have rupture with much blood in the peritoneal cavity, or perhaps a living fetus, with the sac, then the vaginal route is out of place, and the abdominal route is the only one to use. I had a case recently of ruptured tube, with a three and a half months' live fetus, much blood in the abdominal cavity, which I could not have discovered if I had gone through the vagina. We must not forget that there is a pelvic brim, and work above it can not be done through the vagina.

DR. SETH C. GORDON, Portland, Me.—I do not believe Dr. Humiston voices the sentiment of the gynecologists of this country when he says that operations by vagina are increasing. I believe they are decreasing and very rapidly, too. The case he cited was one strictly for the vaginal operation, and I make this emphatic because I am satisfied that if I had adopted the same route in a similar case, I would have saved my patient.

DR. CHARLES P. NOBLE, Philadelphia—I agree with Dr. Humiston that in fat patients the abdominal route presents many difficulties, but I do not believe for one moment that vaginal hysterectomy is on the increase, either in this country or in any other country. Some years ago Dr. Jacobs of Belgium came over here to teach us to do vaginal hysterectomy. He saw what good work was being done with the abdominal route and he is now the leading abdominal operator in Belgium. The same thing is true of Segond of Paris. So far as cancer is concerned, there is great reaction in Europe for the abdominal route.

As to the relative merits of these operations in extrauterine pregnancy, I have done about seventy-five typical operations and have had one death. This patient had both phthisis and nephritis. Of four cases I operated on from below, two had to be reoperated on from above. In one hydrosalpinx developed and in the other a tubal mole developed. One of our members had hemorrhage a number of times and had to go in from above, after having started from below. We are not going to gain anything by giving up the good thing we have in the abdominal operation for the uncertainty of the vaginal route.

DR. HUMISTON, in closing—A few years ago I did nothing but the abdominal operation, and I considered I had a low mortality, but since I carefully selected the route applicable to each case, my mortality is still less. I make one vaginal hysterectomy where I make six abdominal hysterectomies. Judgment should be displayed in each case. I have not as yet lost a case of extrauterine pregnancy, and I have operated on every one from above. When the patient was in profound shock, I would resort to saline infusion the moment the anesthetic was started, and I have a *nil* mortality in extrauterine cases. Some of the histories of these cases are almost beyond belief. I have operated when the patient was pulseless, temperature as low as 94.5. Saline infusion was started the moment the operation began, the abdomen was opened rapidly, without waiting to clear away clots, but I put on the clamp, and when the operation was completed the patient was taken off the table with a pulse. You must individualize your cases, and sometimes you will do an occasional vaginal operation, but in the majority of cases your operation will be abdominal.

POST-OPERATIVE INTESTINAL PARESIS.*

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The convalescence of a person at the present time on whom an intra-abdominal operation has been performed is usually so peaceful a period that it is often hard to realize the grave dangers which surround the patient and which are liable suddenly to obtrude themselves and change the scene into a stormy and anxious one. Hence, the post-operative responsibility of the physician is great, for the safety of the patient depends on his ability to quickly recognize and successfully treat these complicating conditions as they arise. Of these complications the most frequent and probably the one least often recognized in its initial stage, when it is readily controlled and a fatal outcome avoided, is that form of intestinal obstruction due to failure of the muscular fibers of the intestines to contract, giving rise to an accumulation of the bowel contents in the paralyzed portions of the gut.

ETIOLOGY.

The trouble usually arises from injury of the intestinal nerve supply in the course of an intra-abdominal operation, and is especially liable to occur if the operation is prolonged and rendered difficult by reason of the distention of the bowel with gas. It is probable that the rapid and excessive development of gas which often follows laparotomy is due to defective or deranged innervation, as has been pointed out by Mr. J. W. Malcolm of London, rather than to fermentative and putrefactive processes, although these may be important factors in the production of the trouble. Adenot says that in a certain number of these cases the chief difficulty is due to pressure upon the left subcostal angle of the colon by the distended coils of small intestines; peritonitis and enteritis-thrombosis and embolism of branches of the mesenteric arteries or veins may also give rise to it.

SYMPTOMATOLOGY.

When the trouble is due to trauma of the intestinal nerves it first manifests itself by the continuance of the nausea which usually follows the administration of the anesthetic, therefore, if no morphia has been administered to the patient following the operation, and eighteen hours have elapsed since its conclusion, and she is more or less nauseated, having no desire for nourishment, or is regurgitating a quantity of straw-colored liquid from time to time, has passed no gas from the anus, is slightly tympanitic, the pulse rate weak and increasing in frequency, the bodily temperature slightly elevated while the respirations are normal, there is good reason for believing that the patient is suffering from intestinal paresis. If the course of the disease is not interfered with, the vomiting becomes more frequent, the amount of liquid ejected larger in quantity, its color gradually darkening till it finally becomes black, its odor seldom, however, becoming fecal in character; meanwhile the intestinal distention continues to increase, the pulse rate to rise and to lose in force, the body temperature slowly rising, while the respirations slightly increase in frequency. The course of the disease is rapid, a fatal termination usually being reached within forty-eight hours of the onset.

DIAGNOSIS.

From peritonitis the disorder may be differentiated by its earlier onset, by the character of the pulse, the

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